

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023

Subject Code: 3152312

Date: 05-12-2023

Subject Name: Adhesives and Sealants in Plastics

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Give the example of adhesives used with plastics. **03**
(b) Explain the factors to be considered related to compatibility with the adherent while selecting an adhesive. **04**
(c) Explain how adhesives play a significant role in the economy by enabling various industries to develop. Enlist various industries and explain the role of adhesives in detail. **07**
- Q.2** (a) Enlist the selection criteria for adhesives. **03**
(b) List out and explain the surface treatment methods used for adhesive bonding. **04**
(c) Discuss in brief Adhesive and cohesive forces involved in Adhesion. **07**
- OR**
- (c) Explain the factors for selection of bonding material and process. **07**
- Q.3** (a) Discuss the Rules to be observed for cementing of plastics. **03**
(b) Differentiate between phenolic resin adhesive with acrylic adhesive. **04**
(c) Explain the key steps involved in adhesive handling. **07**
- OR**
- Q.3** (a) Explain Types of cements used in Bonding of plastics. **03**
(b) Give properties and applications of silicone adhesives. **04**
(c) Discuss advantages and disadvantages of common Sealant Materials with respect to their durability. **07**
- Q.4** (a) Explain the composition, bonding property and application of polyvinyl acetate emulsion. **03**
(b) Write short note on epoxy resin adhesive. **04**
(c) Discuss the key consideration for adhesive joint design in plastics. **07**
- OR**
- Q.4** (a) Enlist the advantages of bonding design. **03**
(b) Write short note on Phenolic resin adhesive **04**
(c) Explain the various properties of silicone adhesives sealants. **07**
- Q.5** (a) Enlist the application of pressure sensitive adhesive products **03**
(b) Give the detailed classification of sealant. **04**
(c) Enlist and explain testing methods for evaluating PSA products. **07**
- OR**
- Q.5** (a) Explain conductive adhesives with example. **03**
(b) Write down the different sources of adhesive with suitable examples. **04**
(c) Discuss in detail, adhesives used in Automotive Industry. **07**
